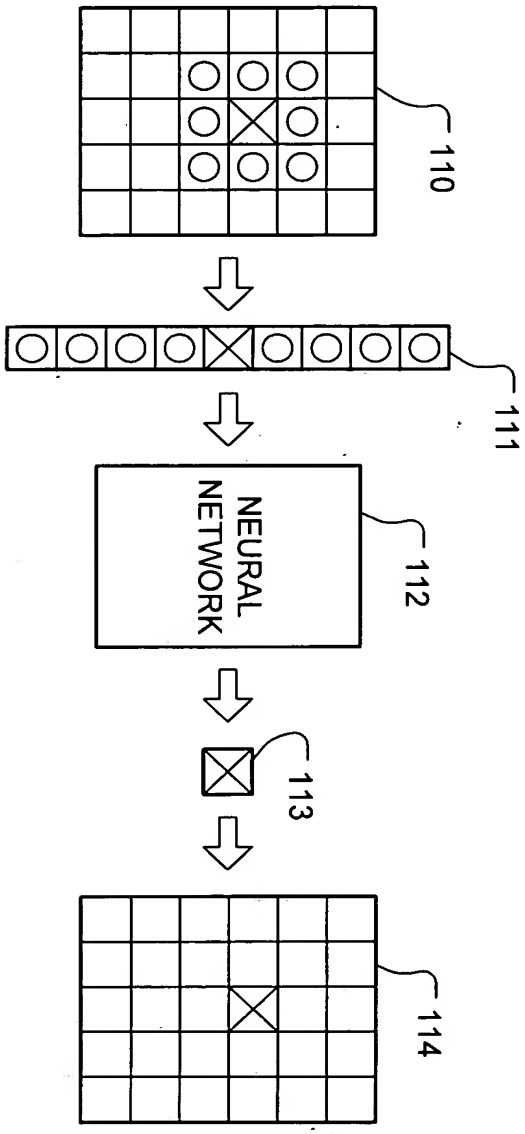


FIG. 1

FIG. 2a

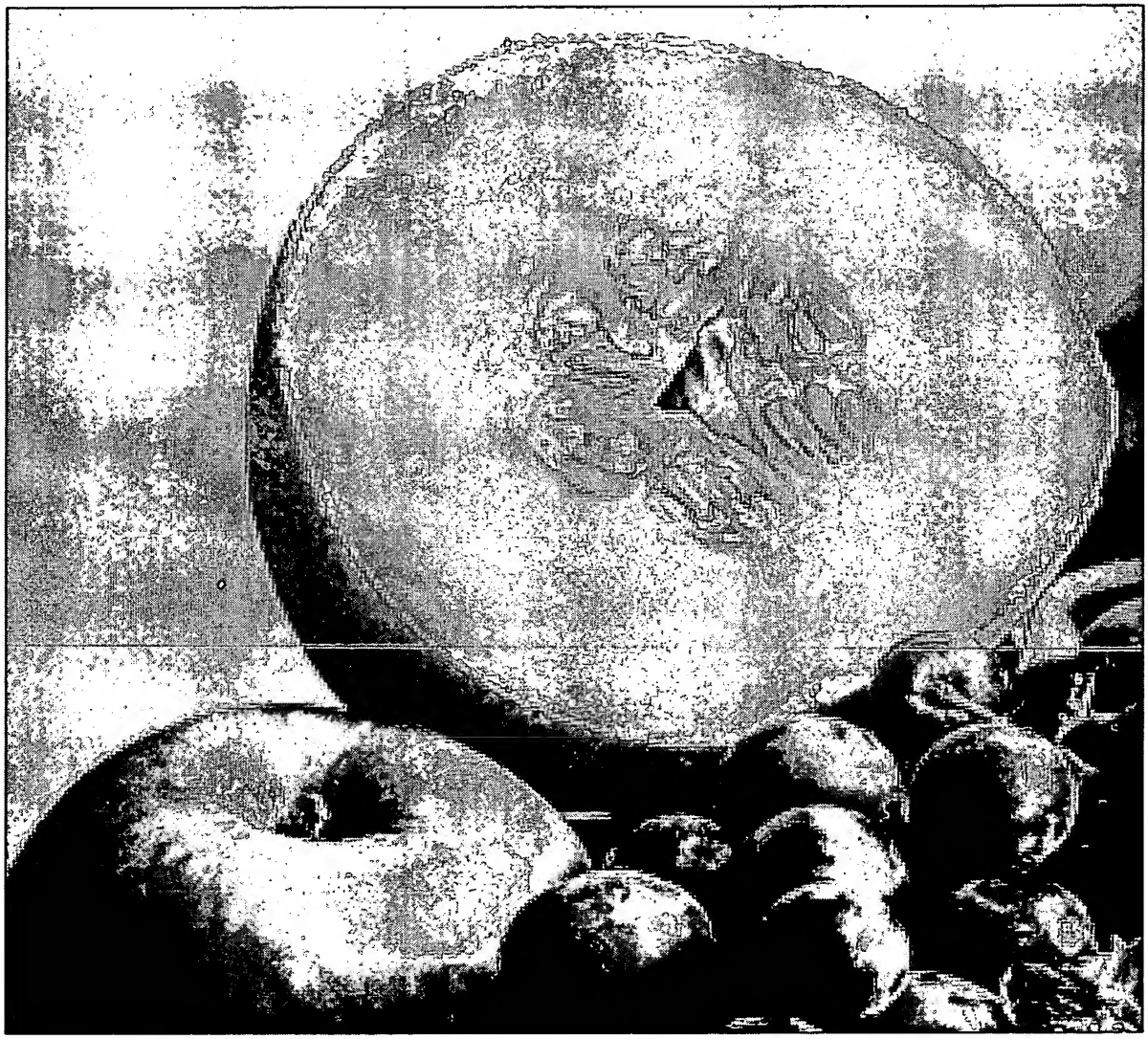


FIG. 2b

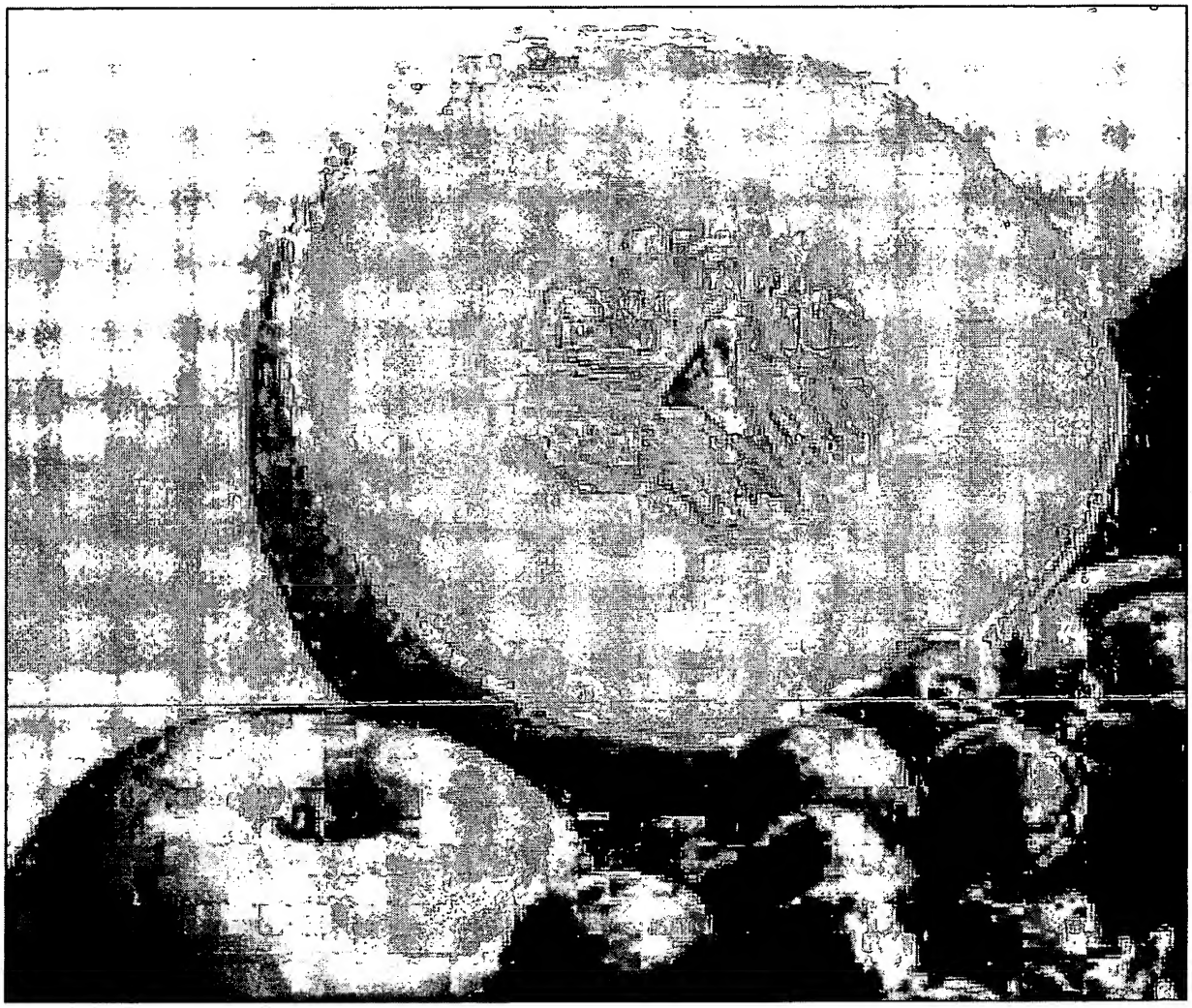


FIG. 2c

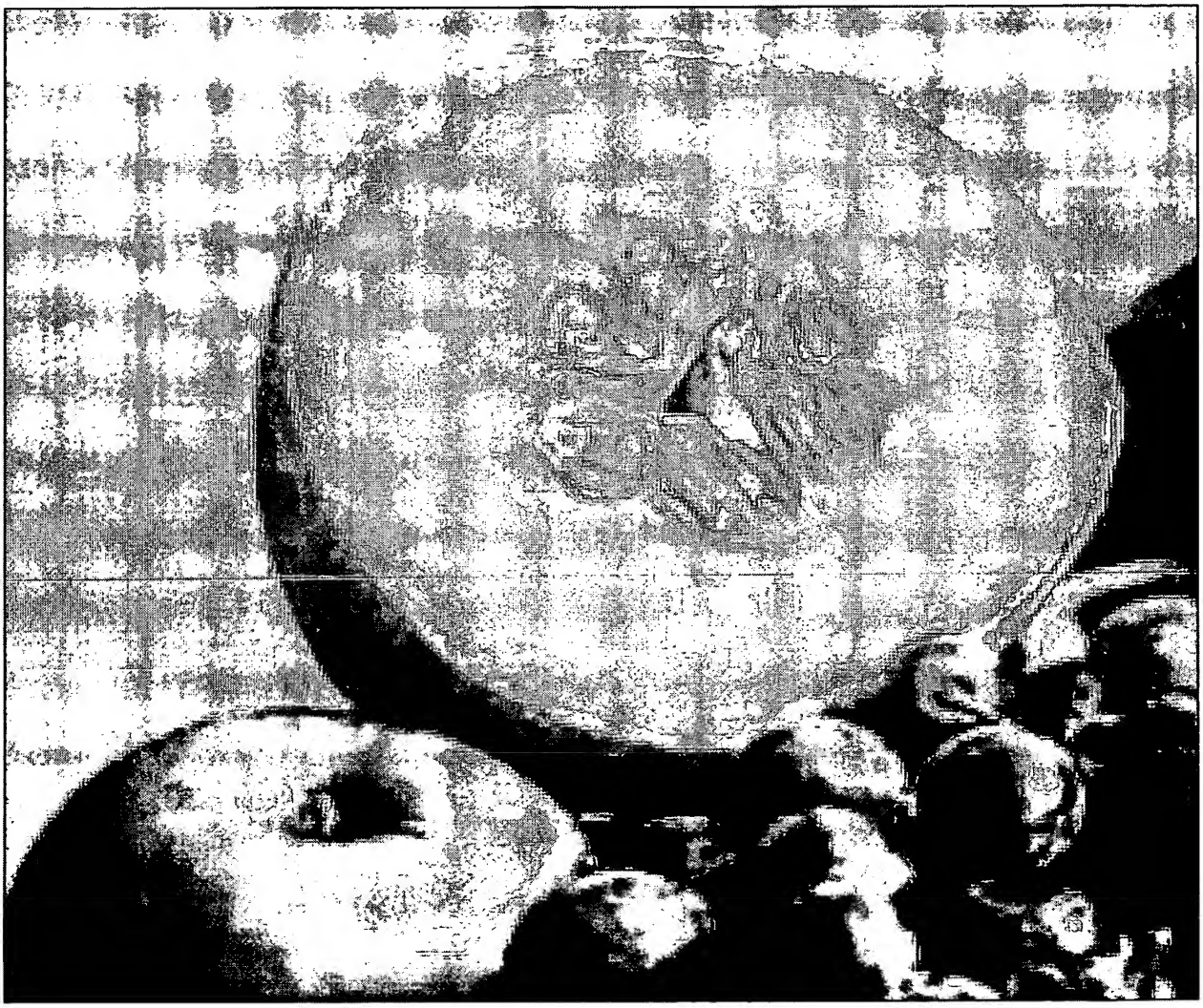


FIG. 3

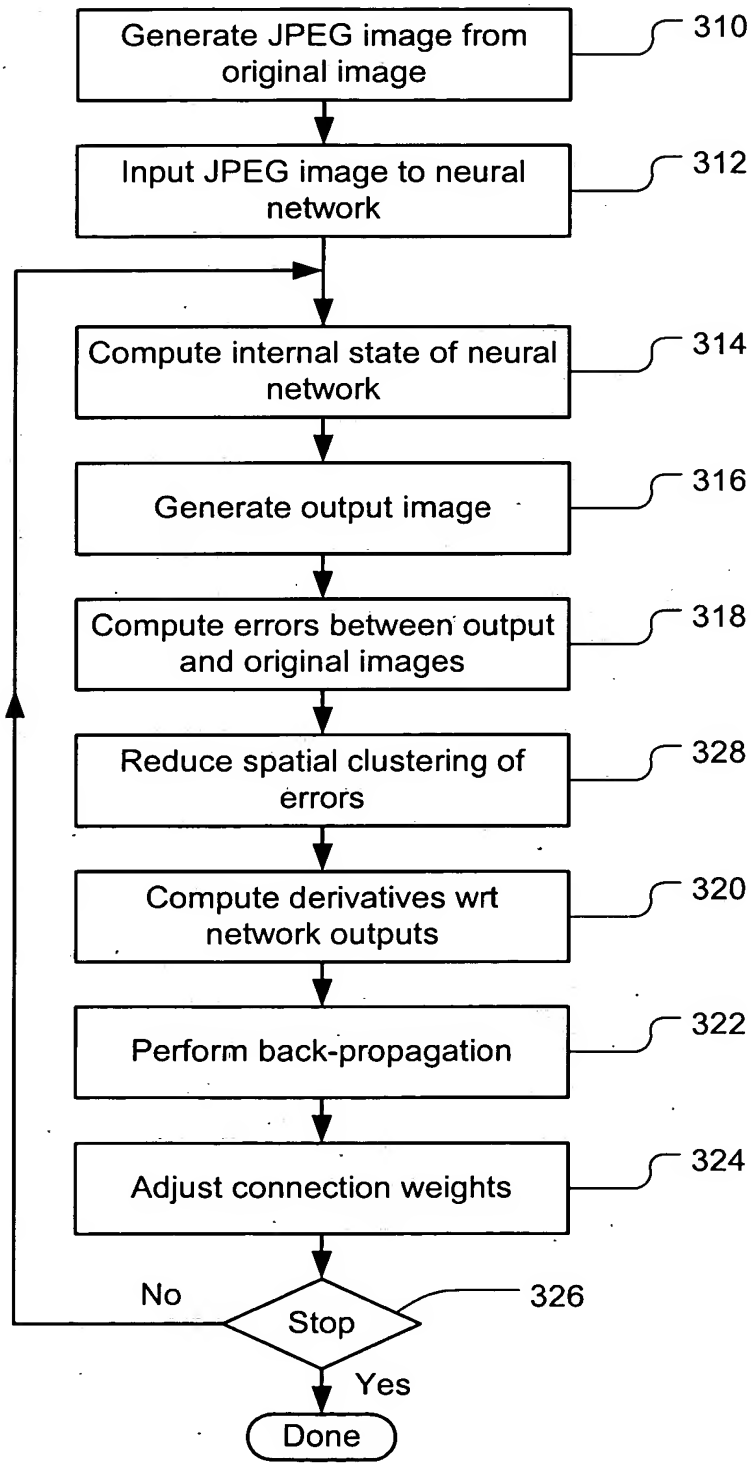

Generate JPEG image from original image
310
Input JPEG image to neural network
312
Compute internal state of neural network
314
Generate output image
316
Compute errors between output and original images
318
Reduce spatial clustering of errors
328
Compute derivatives wrt network outputs
320
Perform back-propagation
322
Adjust connection weights
324
Stop
326
No
Yes
Done

FIG. 4

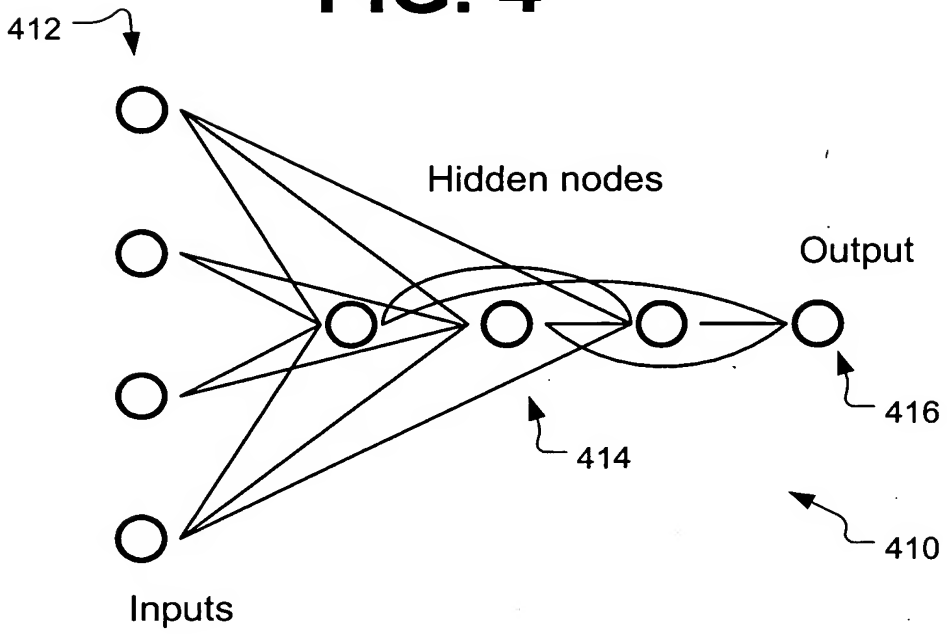

412
Hidden nodes
Output
416
414
410
Inputs

FIG. 5

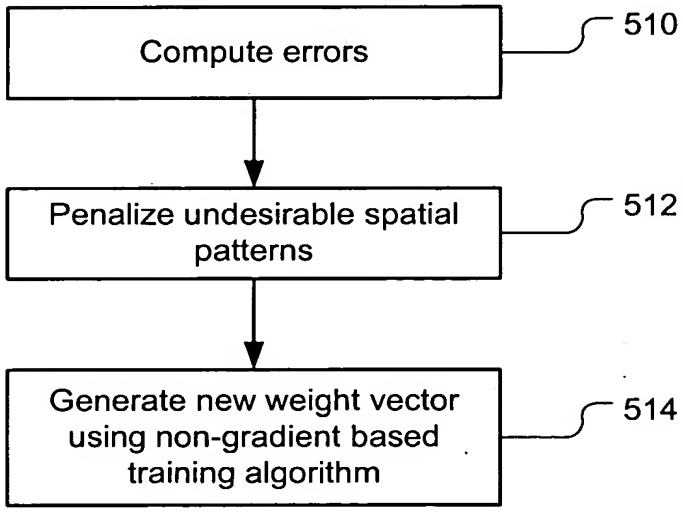
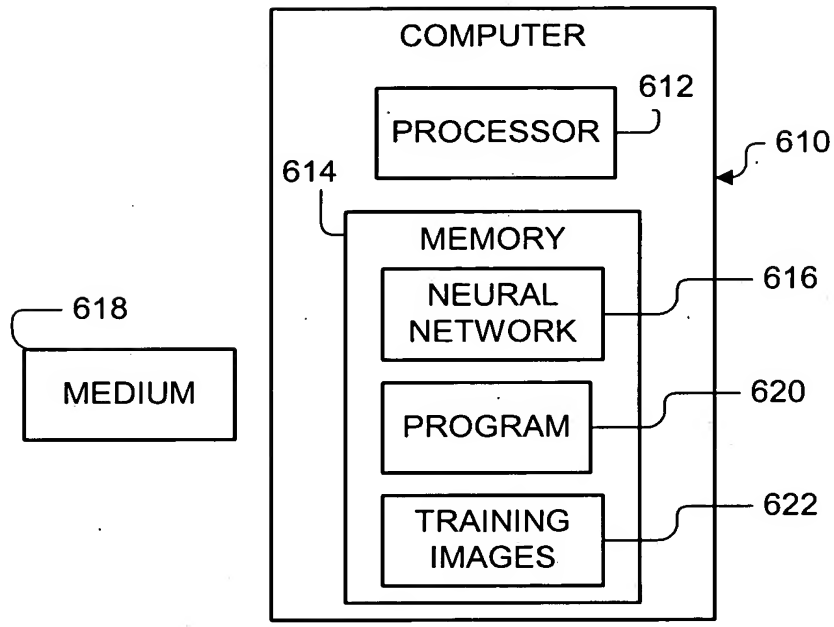

Compute errors
510
Penalize undesirable spatial patterns
512
Generate new weight vector using non-gradient based training algorithm
514

FIG. 6


COMPUTER
612
PROCESSOR
610
614
MEMORY
NEURAL NETWORK
616
618
MEDIUM
PROGRAM
620
TRAINING IMAGES
622